

S-100 WG8 6.16 ECDIS Dataset Handling

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Background

S-100 machine readable concepts

Avoid custom product specific implementations

Common behaviour to support products such as S-124

Reuse of patterns for consistency and usability

S-100 support for dataset loading and handling

Dataset Loading/Unloading by scale

- S-101 discussions about dataset loading algorithms.
- Should be part of S-100 or S-98

Loading of scaleless and overlapping data

- Products such as S-123 Radio Services may overlap
- May need some logic to define loading/drawing order

Dataset cancelling

- Any product
- S-124 Navigation Warnings allow datasets to cancel others or self cancel

Viewing historic data

- View datasets that were active at a given date/time.

Determining if a dataset is active for viewing



Viewing date is after (>) dataset issue date and time.

The dataset has not been replaced with a new edition.

The dataset has not been cancelled before the viewing date.

The viewing date is within the S100_DatasetDiscoveryMetadata/ temporalExtent.

S-124 Dataset Model

- Each NAVWARN is issued as a new/separate dataset
 - Similar pattern to NAVWARNS prior to S-100
 - Easy to filter/find NAVWARNS intersecting an area of interest
 - Use ECDIS behaviour to load/view datasets that are active.
 - Complete coverage is not necessary
 - NAVWARNs can overlap
 - Fixed limits or grouping NAVWARNs in datasets would be a departure from expected user patterns
 - Use dataset discovery to find/list active NAVWARN datasets

Dataset life cycle for S-124 in S-100

- New Dataset
 - Simple, deliver new dataset
- Self Cancelling
 - Use temporalExtent to set an expiration
- Cancelling another dataset
 - Referencing other datasets is not really supported in S-100
 - S-124 is GML encoding,
 - What would update filename be?
 - updates are not well defined in part 10b
 - would it be an empty gml file?
- Determining a set of 'In-Force' datasets
 - No replacement for Bulletin of In-Force NAVWARNs
 - S-128 probably not a good fit (volume of datasets, dynamic, query/search needs)
 - Need a way to provide a list of datasets
 - Service approach good to support dynamic nature
 - Logic for reconciliation of currently available datasets



S-124 Use of In-Force Bulletin to reconcile datasets

- Normally a dataset would be self cancelling or cancelled explicitly by another dataset.
- Is an equivalent of an In-Force bulletin required in order to reconcile or check that new datasets or cancellations have not been missed?
 - How would this be encoded in S-100?
 - How would an ECDIS know what to do with such a bulletin?
 - Could be a sort of validation check active set of datasets

Referencing/Cancelling a dataset using Metadata

- Consider if datasets could be referenced and cancelled using meta data in an exchange set without requiring actual data files.
 - An exchange set that refers to datasets to be cancelled
 - An exchange set that refers to a set of active datasets
 - An exchange set used for discovery of data to download
- **S100_DatasetDiscoveryMetadata** has restrictions based on the use case of delivering datasets.
 - Filename, compression, signature are mandatory

S100_DatasetDiscoveryMetadata	
+	fileName: URI
+	description: CharacterString [0..1]
+	datasetID: URN [0..1]
+	compressionFlag: Boolean
+	dataProtection: Boolean
+	protectionScheme: S100_ProtectionScheme [0..1]
+	digitalSignatureReference: S100_SE_DigitalSignatureReference
+	digitalSignatureValue: S100_SE_DigitalSignature [1..*]
+	copyright: Boolean
+	classification: MD_SecurityConstraints [0..1]
+	purpose: S100 Purpose [0..1]

Discovery vs Delivery Metadata

- Currently S-100 exchange metadata is set up as delivery metadata
- Discovery metadata
 - Describe or reference datasets without including them
 - Consider using MRN to uniquely reference a dataset
- Delivery metadata
 - Describes what is being delivered in the current exchange
 - Includes filenames, signature,...

Adjust hierarchy to support Discovery and Delivery

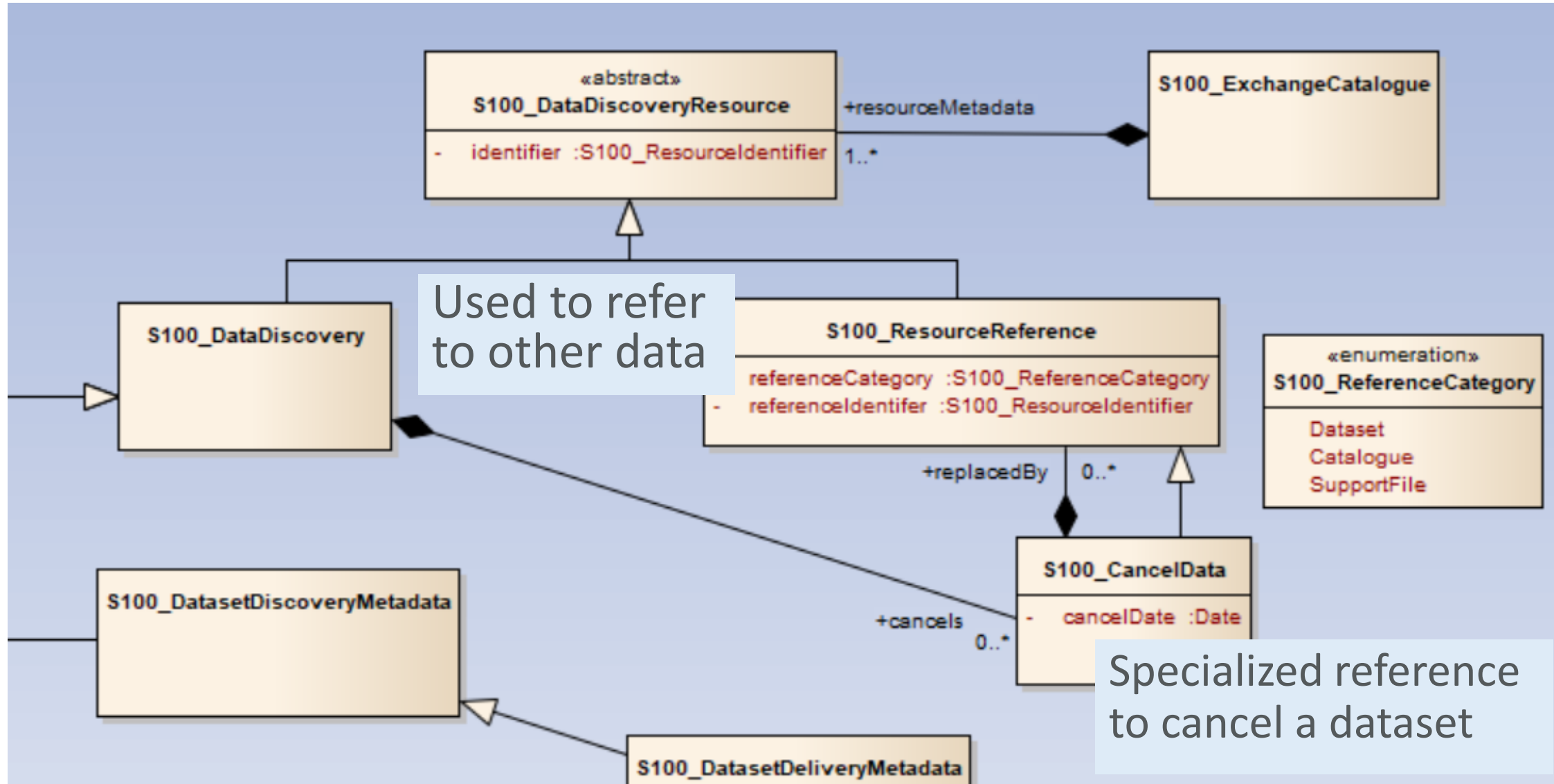
- Separate classes for discovery and delivery
- Add simplified record for dataset reference
- Specialize reference record to cancel another dataset

Insert new abstract Baseclass

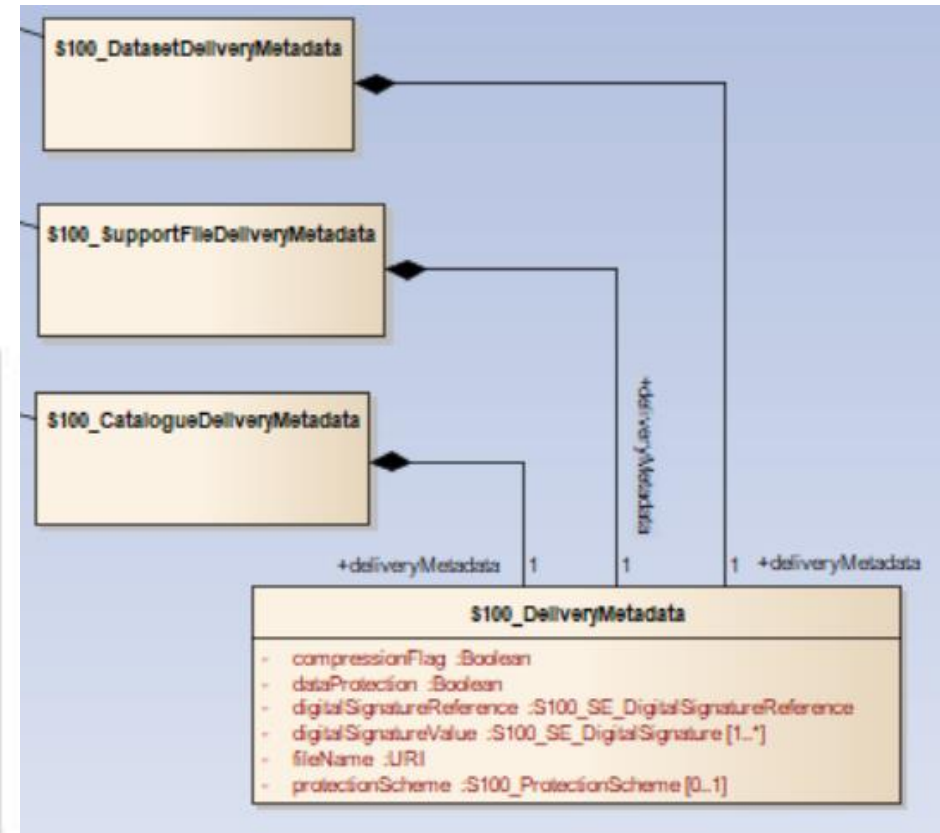
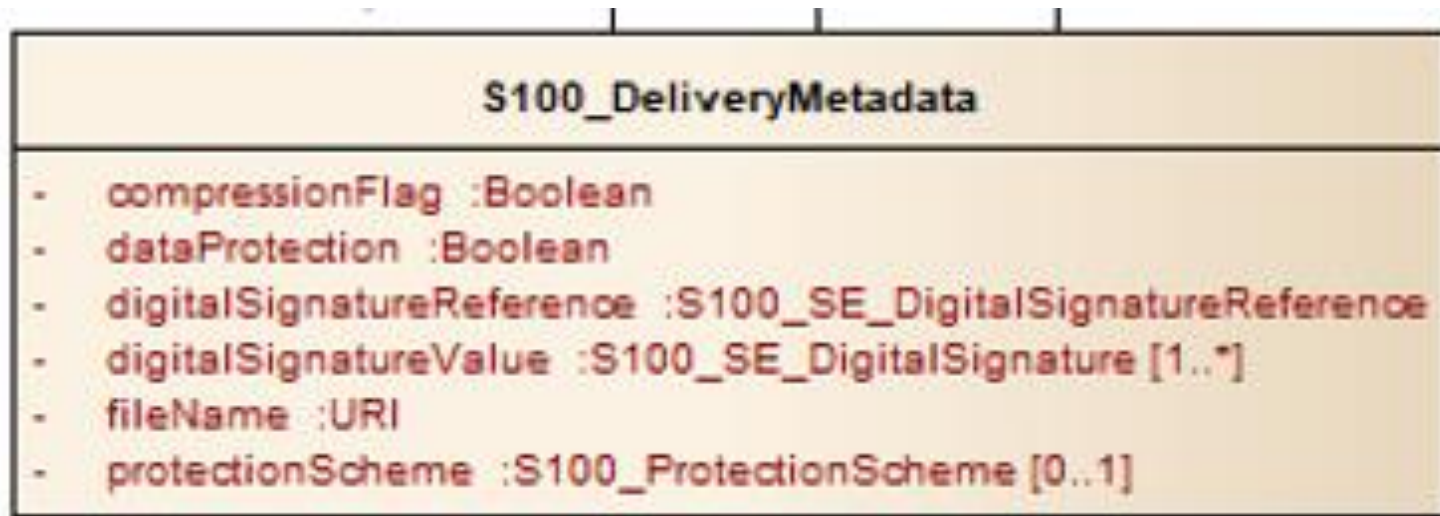


- Includes common identifier concept
 - Probably use MRN

New Data Reference class

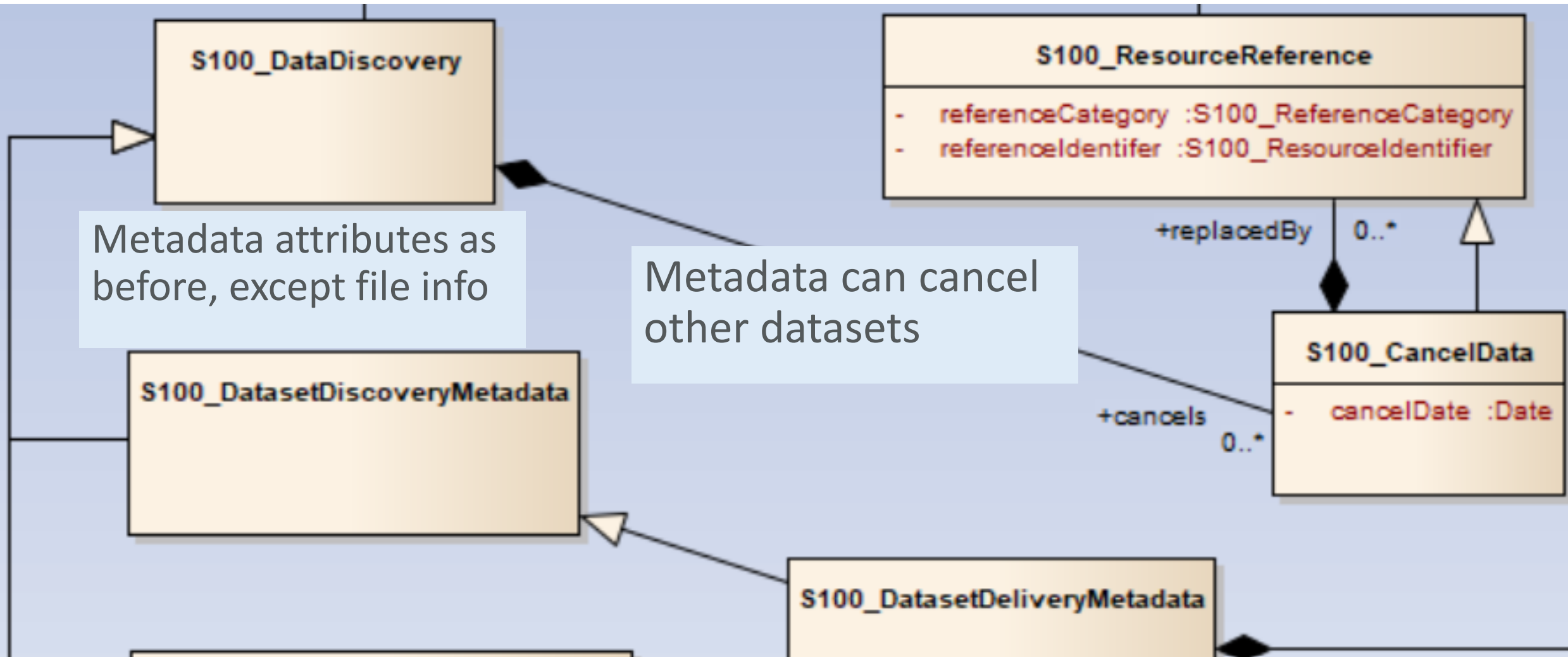


Delivery info in common class

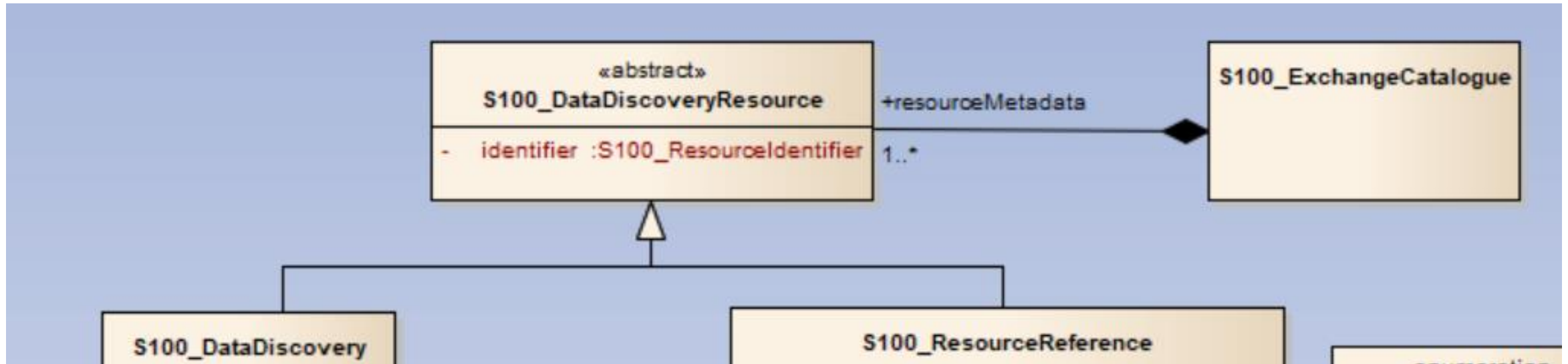


- Used to identify and validate a file being delivered
 - Used for datasets, support files, catalogue files

Dataset Discovery as base for delivery metadata



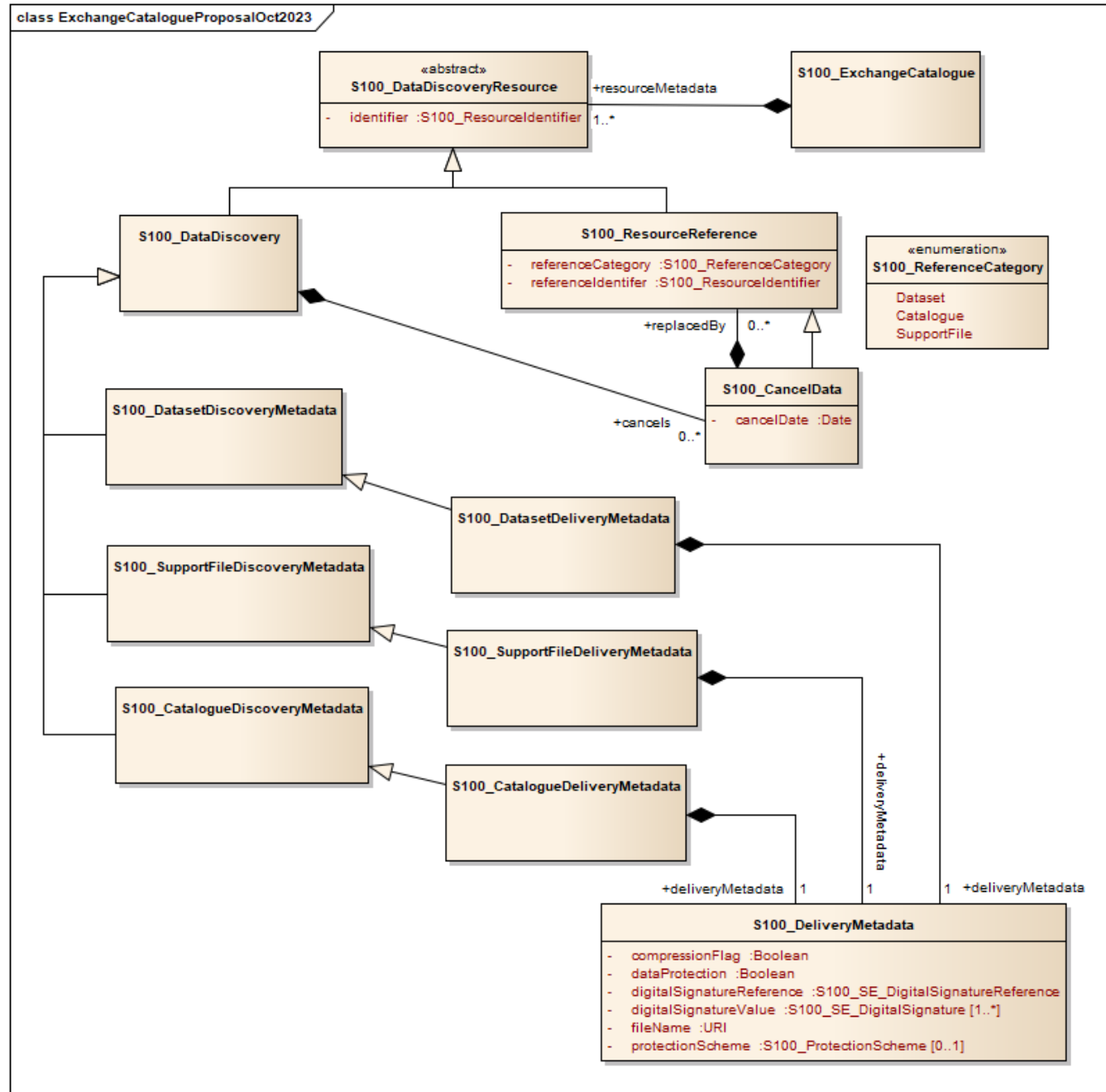
Exchange set can include datasets or references



- Exchange set of discovery lists
 - List of available datasets
 - In-Force Bulletin
- Exchange set to deliver new Data
- Exchange set to Cancel Data
- Exchange set to Deliver and replace

New Hierarchy

- Keep existing discovery content
- Supports new requirements



S-100 WG to Consider

- Add logic for dataset handling to common location
 - Such as S-98
- Extend Exchange set use cases for
 - Exchange of discovery info only
 - Available content
 - Selective queries via a service
 - Reconciliation of holdings
 - Exchange of data cancellation instructions
 - Datasets
 - Catalogues
 - Support files

Thank You!

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